

1.0 Grade 10 reviewEx. 1 Evaluate if  $x = 2$  and  $y = -3$ this is an expression  $4x - y^2 + xy - 5y$ 

$$\begin{aligned}
 &= 4(2) - (-3)^2 + (2)(-3) - 5(-3) \\
 &= 8 - 9 - 6 + 15 \\
 &= 8
 \end{aligned}$$

**Caution:**  
Be sure to use brackets  
when substituting  
why?  
 $(-3)^2 = (-3)(-3) = 9$   
 $-3^2 = -(3 \times 3) = -9$

Ex. 2 Solve for  $y$  if  $x = 3$  this is an equation

$4x + y = 5$

$$\begin{aligned}
 y &= 5 - 4x \\
 y &= 5 - 4(3) \\
 y &= 5 - 12 \\
 y &= -7
 \end{aligned}$$

$$\begin{aligned}
 4(3) + y &= 5 \\
 12 + y &= 5 \\
 y &= 5 - 12 \\
 y &= -7
 \end{aligned}$$

Ex. 3 Is  $(-2, 24)$  a solution of

$y = 5x^2 - x + 2$

check each side  
separately  
then compare answers

LS	RS
$y$	$5x^2 - x + 2$
$24$	$5(-2)^2 - (-2) + 2$
	$20 + 2 + 2$
	$24$

$L.S. = R.S.$   
 $(-2, 24)$  is the solution

Ex. 4 Determine the Slope & y intercept :

$3x - 5y + 15 = 0$

$$\begin{aligned}
 -5y &= -3x - 15 \\
 \frac{-5y}{-5} &= \frac{-3x}{-5} - \frac{15}{-5} \\
 y &= \frac{3}{5}x + 3
 \end{aligned}$$

$$y = mx + b$$

(slope) (y-intercept)

Ex. 5 Determine the  $x$  &  $y$  intercepts :

$2x - 8y + 24 = 0$

Set  $x=0$ 

$$\begin{aligned}
 2(0) - 8y + 24 &= 0 \\
 -8y &= -24 \\
 \frac{-8y}{-8} &= \frac{-24}{-8} \\
 y &= 3
 \end{aligned}$$

Set  $y=0$ 

$$\begin{aligned}
 2x - 8(0) + 24 &= 0 \\
 2x &= -24 \\
 \frac{2x}{2} &= \frac{-24}{2} \\
 x &= -12
 \end{aligned}$$

Ex. 6 Determine the  $x$  &  $y$  intercepts

$y = -2x^2 + 6$

Set  $y=0$ 

$$\begin{aligned}
 -6 &= -2x^2 \\
 \frac{-6}{-2} &= \frac{-2x^2}{-2} \\
 3 &= x^2 \\
 x &= \sqrt{3}
 \end{aligned}$$

Set  $x=0$ 

$$\begin{aligned}
 y &= -2(0)^2 + 6 \\
 y &= 6
 \end{aligned}$$

Ex. 7 Expand and Simplify:

a)  $(x-2)(x+1)$

$$\begin{aligned}
 &= x^2 + x - 2x - 2 \\
 &= x^2 - x - 2
 \end{aligned}$$

b)  $(x-3)^2$

$$\begin{aligned}
 &= (x-3)(x-3) \\
 &= x^2 - 6x + 9
 \end{aligned}$$

c)  $2(x+4)^2$

$$\begin{aligned}
 &= 2(x+4)(x+4) \\
 &= 2(x^2 + 8x + 16) \\
 &= 2x^2 + 16x + 32 \\
 &= -3(x+1)(x+1) + 4 \\
 &= -3(x^2 + 2x + 1) + 4 \\
 &= -3x^2 - 6x - 3 + 4 \\
 &= -3x^2 - 6x + 1
 \end{aligned}$$

d)  $3(x+2) - (x+5)^2$

$$\begin{aligned}
 &= 3x + 6 - (x+5)(x+5) \\
 &= 3x + 6 - (x^2 + 10x + 25) \\
 &= 3x + 6 - x^2 - 10x - 25 \\
 &= -x^2 - 7x - 19
 \end{aligned}$$

HWK 1.0  
Grade 10 Review Handout